

Handbook of Forest Insect Pests in Northeast China (1974). Indeed, the morphological features of the adelgids which I collected from southern New England and from Liaoning Province, China closely conform to the detailed descriptions and drawings of Takahashi (1937, see above). Unless Takahashi's 1935 specimens are examined it will remain uncertain whether my discovery represents a new or another record of *P. boernerii* in The People's Republic of China.

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#### NOTE

##### Notes on a Hilltop Aggregation of *Lytta magister* Horn (Coleoptera: Meloidae)

On 22 March 1983 I was ascending a lava ridge (ca. 620 m elevation) W of the headquarters area at Organ Pipe Cactus National Monument, Pima County, Arizona. At about 09:30, just below the E side of the ridge crest, I encountered a small aggregation of *Lytta magister* Horn on and around a flowering brittlebush (*Encelia frutescens* Gray). Within 1 m radius around the bush I found 3 pairs of *Lytta magister* in copulo, and an additional 8 single males. All beetles were relatively inactive when I first located them, but 2 (one male in copulo and a single male) were feeding on encelia petals. Encelia petals, when offered to 3 other single males, were eaten entirely. In the next 30 min several other individuals began feeding on encelia petals, and single males were twice observed to attempt mounting when encountering other males. A check of adjacent encelia bushes revealed several other single males, but no massive aggregation was found. I failed to find other *Lytta magister* aggregations on encelia located lower on the surrounding slopes. Based on the pairs found and the behavior of single males when encountering other conspecifics, it appears the aggregation existed for mating and reproductive purposes, and the aggregation centered around ridge-top encelia bushes.

It has been suggested that hilltop aggregations evolved due to the dispersed distribution of one or both sexes in space and time. Both sexes seek out landmarks or landmark resources, effectively increasing the probability of encountering a member of the opposite sex, and thereby increasing their potential lifetime re-

productive success. Thus females visit landmarks where males aggregate and reproduction is effected. "Hilltopping" has been described as a reproductive strategy for other insect species that are found on the hilltops joining the ridges where my observations were made (see Alcock, 1981, *Behav. Ecol. Sociobiol.* 8: 309–317; 1983, 13: 57–62; 1983, *Anim. Behav.*, 31: 518–525). The males of these hilltopping species (the wasp *Hemipepsis ustulata* Dahlbohm, the butterfly *Atlides halesus* (Cramer), and an undescribed bot fly *Cuterebra* sp., respectively) are territorial, which does not appear to be the case for *Lytta magister*. Large aggregations of *Lytta magister* have been reported previously (Werner et al., 1966, *Univ. Ariz. Agric. Exp. Stn. Tech. Bull.* 175), with collections being made at several species of flowers. At these aggregations no feeding was observed, but they were considered to be mating swarms. Hilltopping was not noted, but Selander (1958, *Trans. Kansas Acad. Sci.* 61: 77–80) located what may have been hilltopping individuals on the Pinacate lava cap about 65 km SW from where my observations were made.

For the aggregation described here the petals of encelia appeared to be a favored food, and during the spring of 1983 encelia was in flower nearly everywhere along the slopes and ridges. In a situation where a resource used by individuals is evenly distributed and abundant, it is possible that both sexes seek out the preferred resource on landmarks as part of a strategy to increase encounters with the opposite sex for reproductive purposes, a strategy analogous to the territorial hilltopping previously mentioned. Such a resource use mating strategy has been suggested for other insect species (Alcock, 1983, *Am. Mid. Nat.* 109: 309–315). I suggest that *Lytta magister* may adopt such a strategy in certain circumstances.

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